

DATA SHEET

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REV : A DATE : 2013-9-4

產品承認書 APPROVED SHEET

| | |
|-------------------|------------------|
| 品 名 Product | R05圓形黃管 |
| 產品型號 Part No | LTLM-R05AYCE-018 |
| 樣品編號 Sample No | -- |

隨本承認書提供該產品的設計及技術參數

Provide the product's design and technical character with the file.

| | | | |
|------------------------------|--------------------|--------------------|------------|
| 核 准 Approved By | 審 核 Check By | 擬 定 Prepared By | |
| 廖志平 | -- | 陈映廷 | |
| 客戶承認 Customer Approved | 核 准 Approved By | 工 程 Engineer | 品 保 Q.C |
| | | | |

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LTLM-R05AYCE-018

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LITE-MAX OPTOELECTRONICS Co., LTD.

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Part No:
LTLM-R05AYGE-018

Features

- * High intensity LED lamp
- * $\varnothing 5\text{mm}$ round shape
- * UV resistant epoxy

Applications

- * LED Screen
- * Illumination

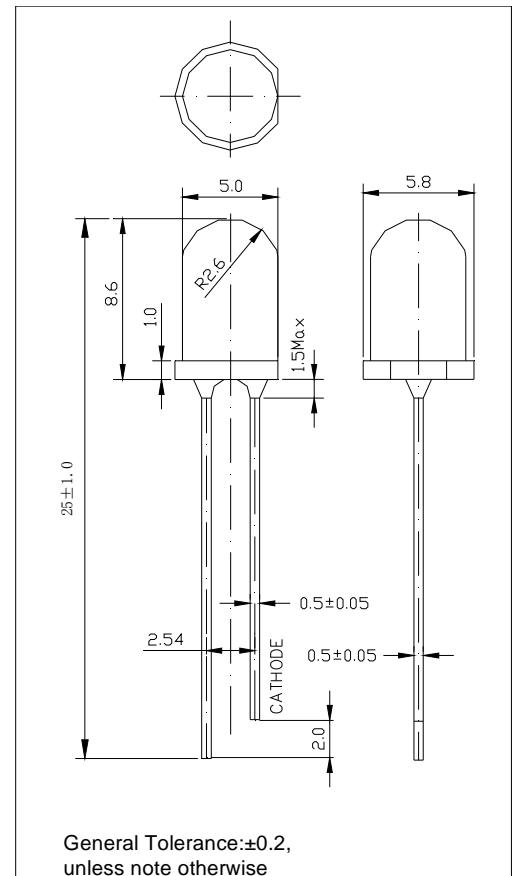
Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Max | Unit |
|-------------------------------------|-----------------|-----------------|------|
| Power Dissipation | P _D | 100 | mW |
| Peak Forward Current * | I _{FP} | 100 | mA |
| Continuous Forward Current | I _F | 20 | mA |
| Reverse Voltage | V _R | 10 | V |
| Operating Temperature Range | Topr | -25°C to +80°C | |
| Storage Temperature Range | Tstg | -40°C to +100°C | |
| Lead Soldering Temperature Δ | Tsol | 260 | °C |

* Duty ratio max 1/10 Pulse Width max. 0.1ms;

Δ At the position of 4mm from the bottom of the package within 5 seconds.

Package Dimensions



Unit : mm

Tolerance are ±0.2, unless note otherwise

Electrical Optical Characteristics

(Ta=25°C , @IF=20mA)

| Part No. | Material | Lens | Emitting Color | Forward Voltage (v) | | Luminous Intensity (mcd) | | Dominant Wavelength(nm) | | Viewing Angle (2θ _{1/2}) |
|----------------|----------|-------------|----------------|---------------------|-----|--------------------------|------|-------------------------|-----|------------------------------------|
| | | | | Min | Max | Min | Max | Min | Max | |
| LM-R05AYGE-018 | AlGaInP | Water Clear | Yellow | 1.8 | 2.6 | 3850 | 6650 | 588 | 596 | 30° |

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BIN Table : (Test at 20mA)

| VF (v) | |
|--------|---------|
| Color | Range |
| V1 | 1.8-2.0 |
| V2 | 2.0-2.2 |
| V3 | 2.2-2.4 |
| V4 | 2.4-2.6 |

| IV (mcd) | |
|----------|-----------|
| Code | Range |
| D | 3850-4620 |
| F | 4620-5545 |
| G | 5545-6650 |

| Wd (nm) | |
|---------|---------|
| Code | Range |
| Y1 | 588-590 |
| Y2 | 590-592 |
| Y3 | 592-594 |
| Y4 | 594-596 |

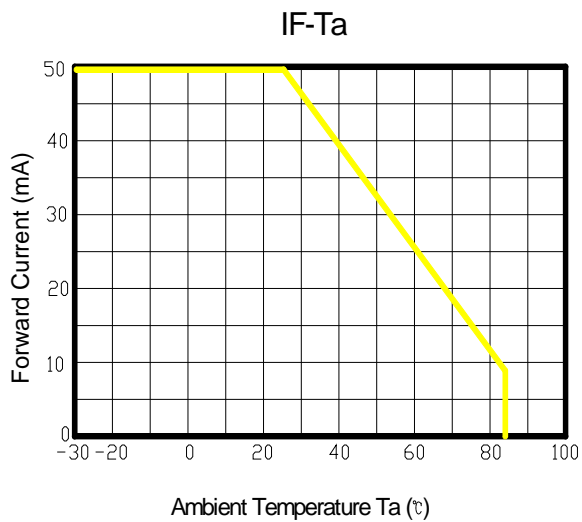
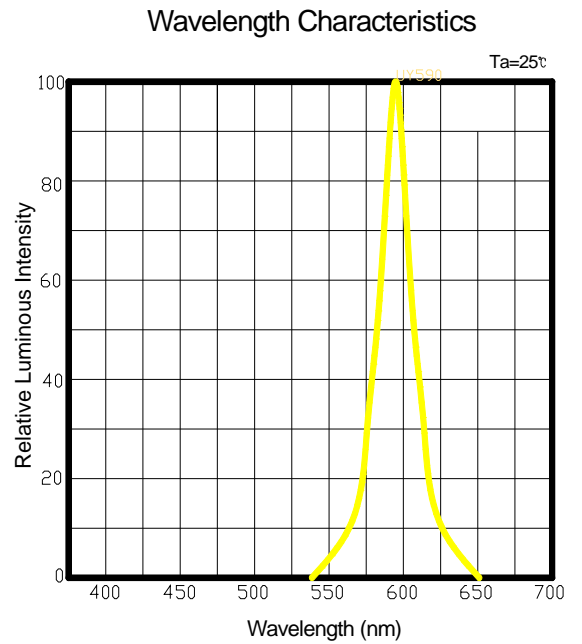
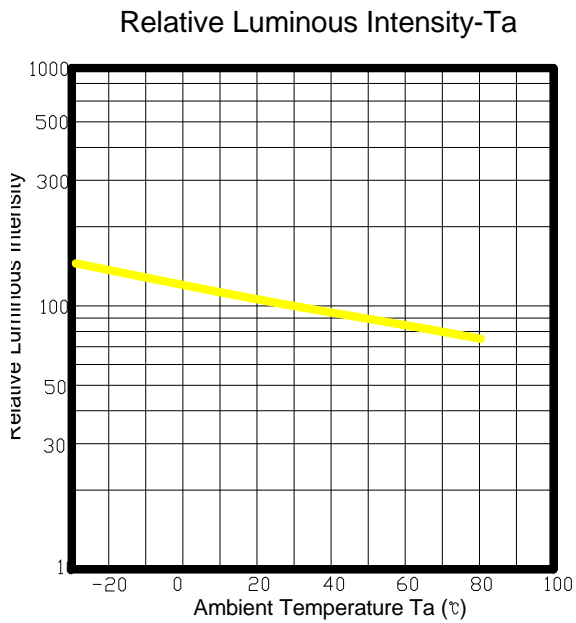
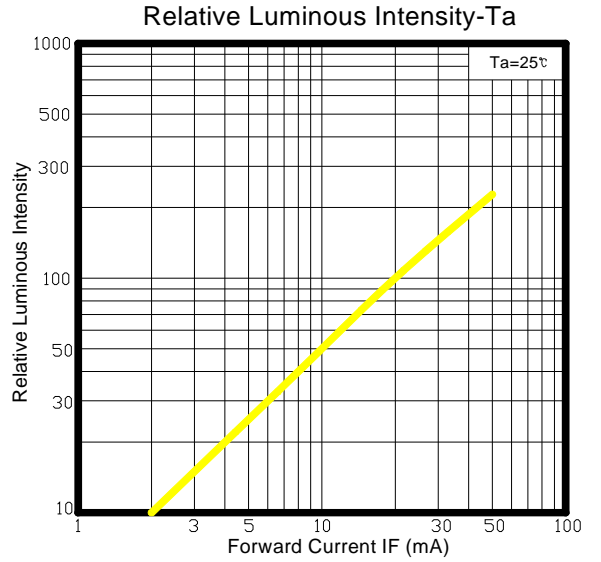
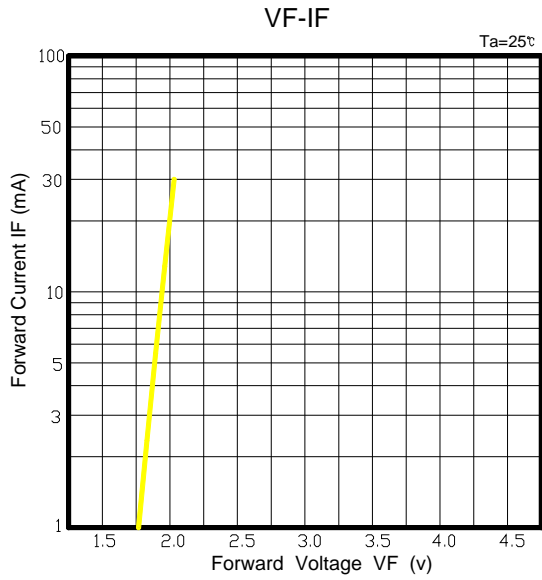
Error range :

- Luminous Intensity (IV) $\pm 10\%$, Forward Voltage (VF) ± 0.1 , Wavelength (Wd) $\pm 1\text{nm}$

Caution in ESD :

1. Static Electricity and surge damages the LEDs. It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs. All devices, Equipment and machinery must be properly grounded.
2. When inspecting own final products on which LEDs were mounted, It is easy to find static-damaged LEDs by light emission test at lower current (below 1mA is recommended) .
3. Damaged LEDs will show some unusual characteristics such as leak current remarkably increases, starting forward voltage becomes lower, or the LEDs get unlighted at the low current.

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Reliability Test

| Classification | Test Item | Test Conditions | Sample Size | Num of Damaged | Reference Standard |
|--------------------|----------------------------------|---|-------------|----------------|--|
| Endurance Test | Operating Life | $I_F=30mA$ 1000Hrs | 22 | 0 | MIL-STD-750:1026 MIL-STD-202:107D JIS C 7021:B-4 |
| | High Temp. High Humidity Storage | $85\pm 5^\circ C$ $90\pm 5\% RH$ 500Hrs | 100 | 0 | MIL-STD-202:103D JIS C 7021:B-11 |
| | Hi-Temp. Storage | $100\pm 5^\circ C$ 1000Hrs | 100 | 0 | MIL-STD-750:2031 MIL-STD-202:210A JIS C 7021:B-10 |
| | Low-Temp. Storage | $-30\pm 5^\circ C$ 1000Hrs | 100 | 0 | JIS C 7021:B-12 |
| Environmental Test | Temperature Cycling | $-30\pm 5^\circ C$ 30min Room Temp. 5min $100\pm 5^\circ C$ 30min 100 Cycles | 100 | 0 | MIL-STD-750:1051 MIL-STD-202:107D JIS C 7021:A-4 |
| | Thermal Shock | $-30\pm 5^\circ C$ 5min $100\pm 5^\circ C$ 5min 100 Cycles | 100 | 0 | MIL-STD-750:1051 MIL-STD-202:107D JIS C 7021:A3 |
| | Solderability | $230\pm 5^\circ C$ Dwell Time $\leq 5sec$ | 22 | 0 | MIL-STD-202:208D MIL-STD-750:2026 MIL-STD-883:2003 JIS C 7021:A-2 |
| | Solder Resistance | $260\pm 5^\circ C$ $10\pm 1sec$ | 22 | 0 | MIL-STD-750:2031 MIL-STD-202:210A JIS C 7021:A-1 |

Criteria for Judging The Damage:

| Item | Symbol | Test Conditions | Criteria for Judgment | |
|--------------------|--------|-----------------|-----------------------|-------------|
| | | | Min | Max |
| Forward Voltage | V_F | $I_F=20mA$ | — | U. S. L*1.1 |
| Reverse Current | I_R | $V_R=10V$ | — | U. S. L*1.0 |
| Luminous Intensity | I_v | $I_F=20mA$ | L. S. L*0.7 | — |

PS: U. S. L. :Upper Standard Level L. S. L. :Lower Standard Level